The Relationship Between Patients' Perception of Care and Hospital Quality and Safety

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Background

- Quality of medical care provided by hospitals is variable and often poor
- Hospital Quality Alliance (HQA) has identified standard measures to improve quality of care and help consumers make informed healthcare choices
  - Focus mainly on process measures in three medical conditions and surgery

Hospital Quality Alliance

- In March of 2008, HQA expanded to encompass patient experiences of care
  - Hospital Consumer Assessment of Healthcare Provider and Systems (HCAHPS) survey
  - First national, standardized, publicly reported information regarding consumers' assessment of hospitals

HCAHPS Domains

- 9 key aspects of care quality
  - Communication with nurses
  - Communication with doctors
  - Responsiveness of hospital staff
  - Pain management
  - Communication about medicines
  - Discharge information
  - Cleanliness and quietness of hospital
  - Overall rating of the hospital
  - Patient willingness to recommend the hospital

Background

- Understanding how HCAHPS measures relate to other technical measures of hospital quality and safety is important
  - Previously available measures have limited scope and coverage
  - HCAHPS draws on experiences of a broader, more representative sample of patients from different hospital services
  - HCAHPS may provide a more representative summary of selected aspects of care quality

Primary Aim

- To examine the associations between HCAHPS scores and other metrics
  - HQA processes of care in the medical and surgical service
  - Patient Safety Indicators (PSIs): Medical and surgical complications of care
- H_o: Hospitals with better patient experiences of care would have better performance on HQA processes of care and fewer complications (PSIs)

Methods

- Retrospective analysis
- 3 data sources
  - National CAHPS Benchmarking Database (NCBD)
    - Data from over 900 hospitals pertaining to experiences of hospital care in 2006
  - HQA data
    - 2006 data of processes of care
  - PSI data
    - 2005 complication rates calculated using data from Medicare discharges

HQA processes of care

- Acute Myocardial Infarction (AMI)
  - Aspirin at arrival
  - Aspirin at discharge
  - Beta-blocker at arrival
  - Beta-blocker at discharge
  - ACE or ARB for left ventricular systolic dysfunction
- Congestive Heart Failure (CHF)
  - Evaluation of left ventricular systolic function
  - ACE Inhibitor or ARB for left ventricular systolic dysfunction
- Pneumonia
  - Initial antibiotic received within 4 hours of hospital arrival
  - Pneumococcal vaccination status
  - Oxygenation assessment

HQA processes of care (con't)

- Surgical
  - Preventative antibiotics received one hour before incision
  - Appropriate preventative antibiotics received for surgery
  - Preventative antibiotics stopped within 24 hours after surgery
  - Treatment to prevent blood clots received within 24 hours before or after selected surgeries
  - Treatments to prevent blood clots (venous thromboembolism) ordered for certain types of surgeries

PSI complication rates

- Medical PSIs
  - Decubitus Ulcer
  - Failure to Rescue
  - Selected Infection Due to Medical Care
- Surgical PSIs
  - Post-op Hemorrhage or Hematoma
  - Post-op Respiratory Failure
  - Post-op PE or DVT
  - Post-op Sepsis

Analysis

- Service Line Specific Data/Analyses
  - Medical and Surgical Services
  - Comparison to Related HQA and PSI measures
- Bivariate relationships (correlation coefficients) were calculated using hierarchical models

Characteristics of Hospital Samples and all General Medical/Surgical Hospitals (% or mean)

	All Gen Med/Surg Hospitals (n=4,602)	Hosp. With Med or Surg HCAPHS scores and HQA data (n=831)	Hosp. With Med or Surg HCAPHS scores and at Least one PSI (n=771)
Bed Size			
• 0 – 99	47	26	23
• 100 – 399	43	62	64
• > 400	9	12	13
Region			
• Northeast	13	8	8
• West	38	37	36
• Midwest	30	34	34
• South	19	22	22

P < 0.05 for all comparisons

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For Profit	15	32	32
Urban	52	74	74
Members of COTH	6	5*	5*
Cardiac ICU	37	49	51
Medical ICU	73	93	95
Percent Medicaid	15.9 ± 10.4	17.4 ± 9.7*	17.8 ± 9.9*
Percent Medicare	47.9 ± 14.8	43.7 ± 12.2	43.6 ± 11.7

*P < 0.05 for all comparisons except those with asterisks

Correlations between hospital HCAPHS ratings in medical service and related HQA composite scores

	AMI	CHF	PNA
Overall Rating of Hospital	0.53	0.15	0.28
Would Recommend Hospital	0.63	0.21	0.30
Communication with Doctors	-0.05	-0.06	0.18
Communication with Nurses	0.28	0.01	0.25
Communication about Medications	0.26	0.06	0.24
Pain management	0.35	-0.01	0.22
Clean & Quiet Hospital Environment	-0.02	-0.02	0.27
Responsiveness of Medical Staff	0.23	-0.04	0.27
Discharge Information	0.43	0.11	0.23

Correlations between hospital HCAPHS ratings in surgical service and surgical HQA composites

	Surgery
Overall Rating of Hospital	0.29
Would Recommend Hospital	0.35
Communication with Doctors	0.14
Communication with Nurses	0.30
Communication about Medications	0.19
Pain management	0.24
Clean & Quiet Hospital Environment	0.18
Responsiveness of Medical Staff	0.26
Discharge Information	0.27

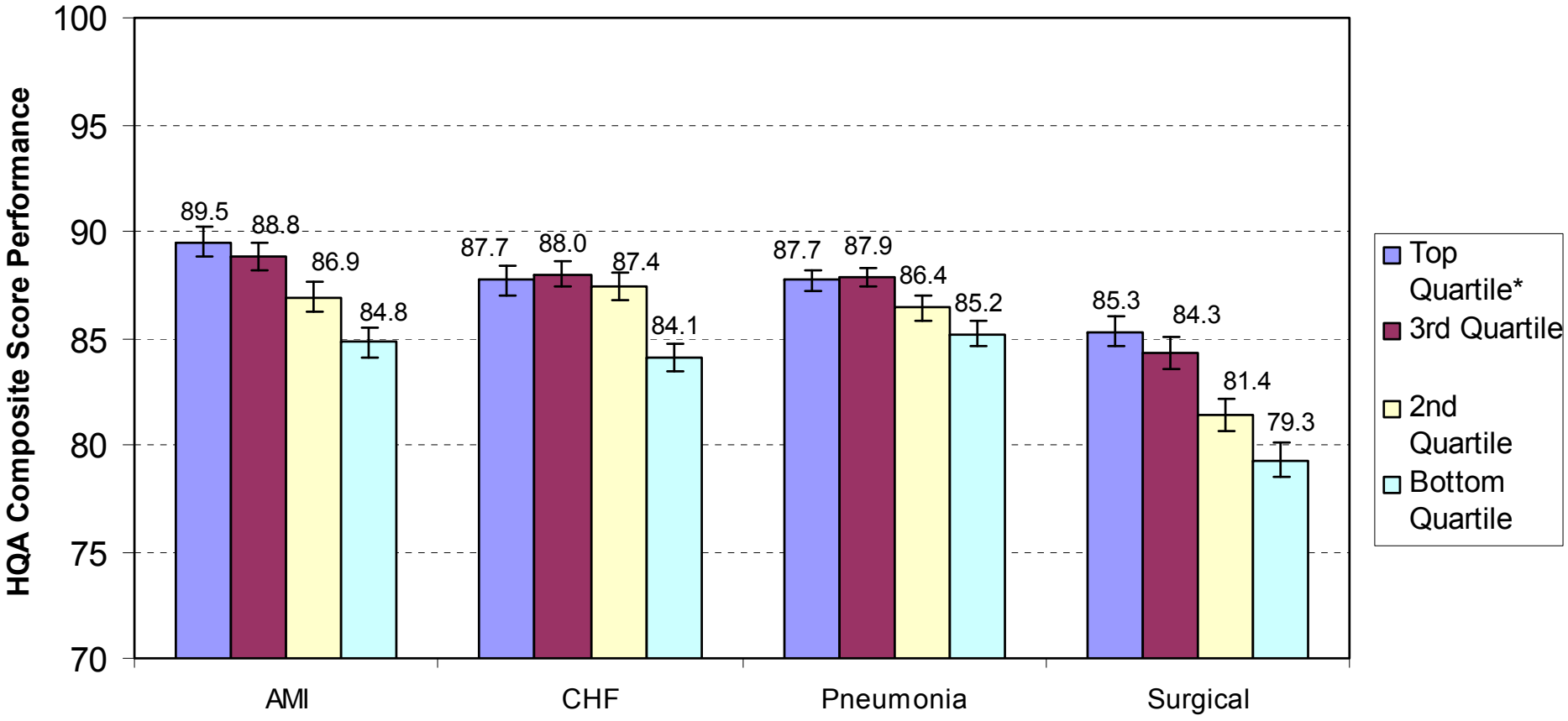
Correlations between hospital HCAPHS ratings in medical service and medical PSIs

	Decubitus Ulcer	Failure to Rescue	Selected Infections
Overall Rating of Hospital	-0.26	-0.16	-0.06
Would Recommend Hospital	-0.28	-0.22	0.04
Communication with Doctors	-0.17	-0.04	-0.37
Communication with Nurses	-0.34	-0.08	-0.16
Communication about Medications	-0.26	0.08	-0.14
Pain management	-0.24	-0.14	-0.07
Clean & Quiet Hospital Environment	-0.23	-0.11	-0.37
Responsiveness of Medical Staff	-0.35	-0.05	-0.23
Discharge Information	-0.22	-0.27	0.08

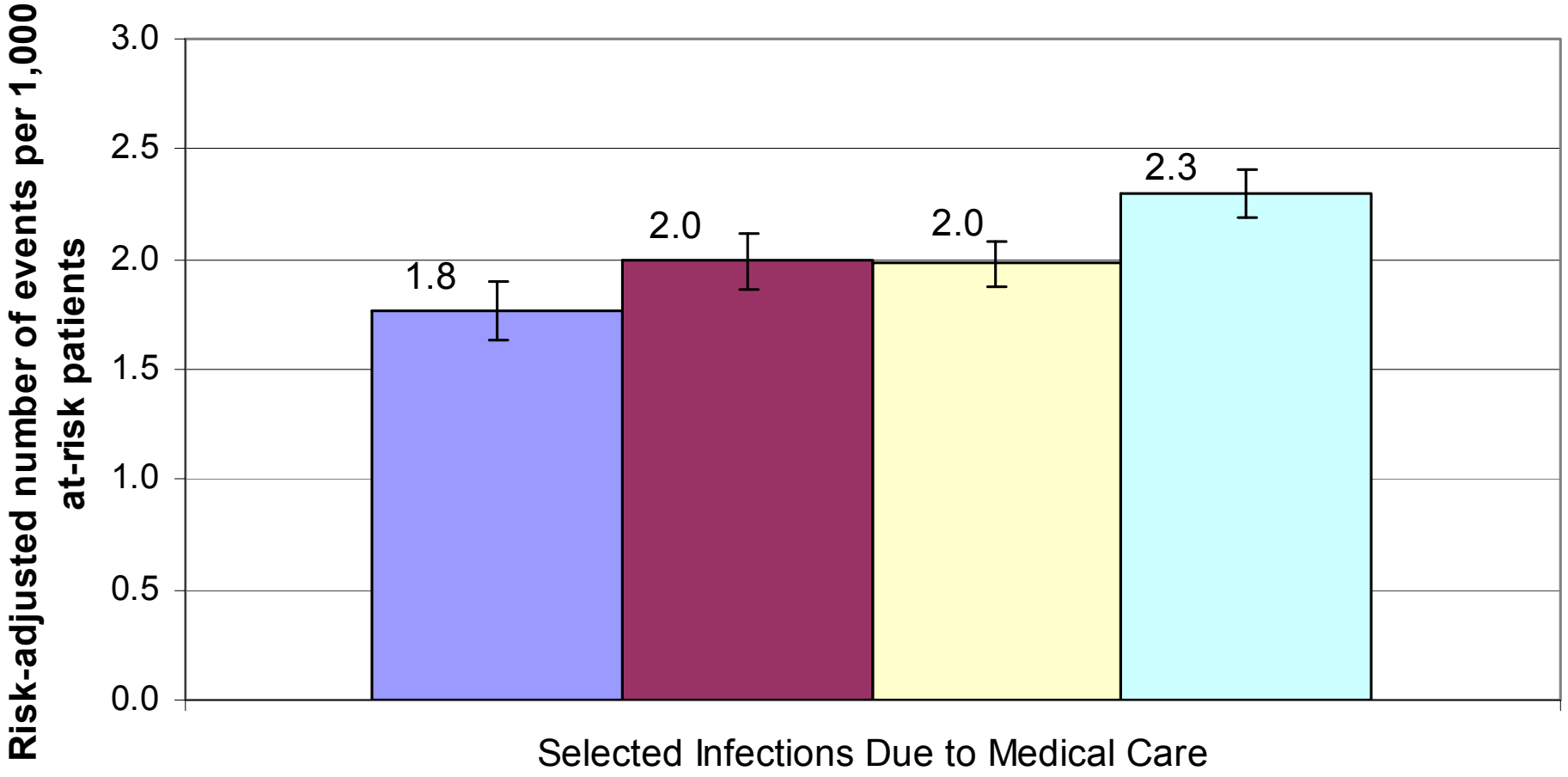
Correlations between hospital HCAPHS ratings in surgical service and surgical post-op PSIs

	Hemorr. or Hematoma	Respiratory Failure	PE or DVT	Sepsis
Overall Rating of Hospital	0.17	-0.33	-0.03	-0.08
Would Recommend Hospital	0.32	-0.46	0.00	-0.16
Communication with Doctors	-0.11	-0.30	-0.07	-0.19
Communication with Nurses	0.23	-0.36	-0.17	0.12
Communication about Medications	NC*	-0.34	-0.20	-0.29
Pain management	0.23	-0.41	0.15	NC
Clean & Quiet Hospital Environment	-0.11	-0.14	-0.09	0.16
Responsiveness of Medical Staff	0.08	-0.44	-0.21	-0.16
Discharge Information	-0.11	0.24	-0.18	-0.27

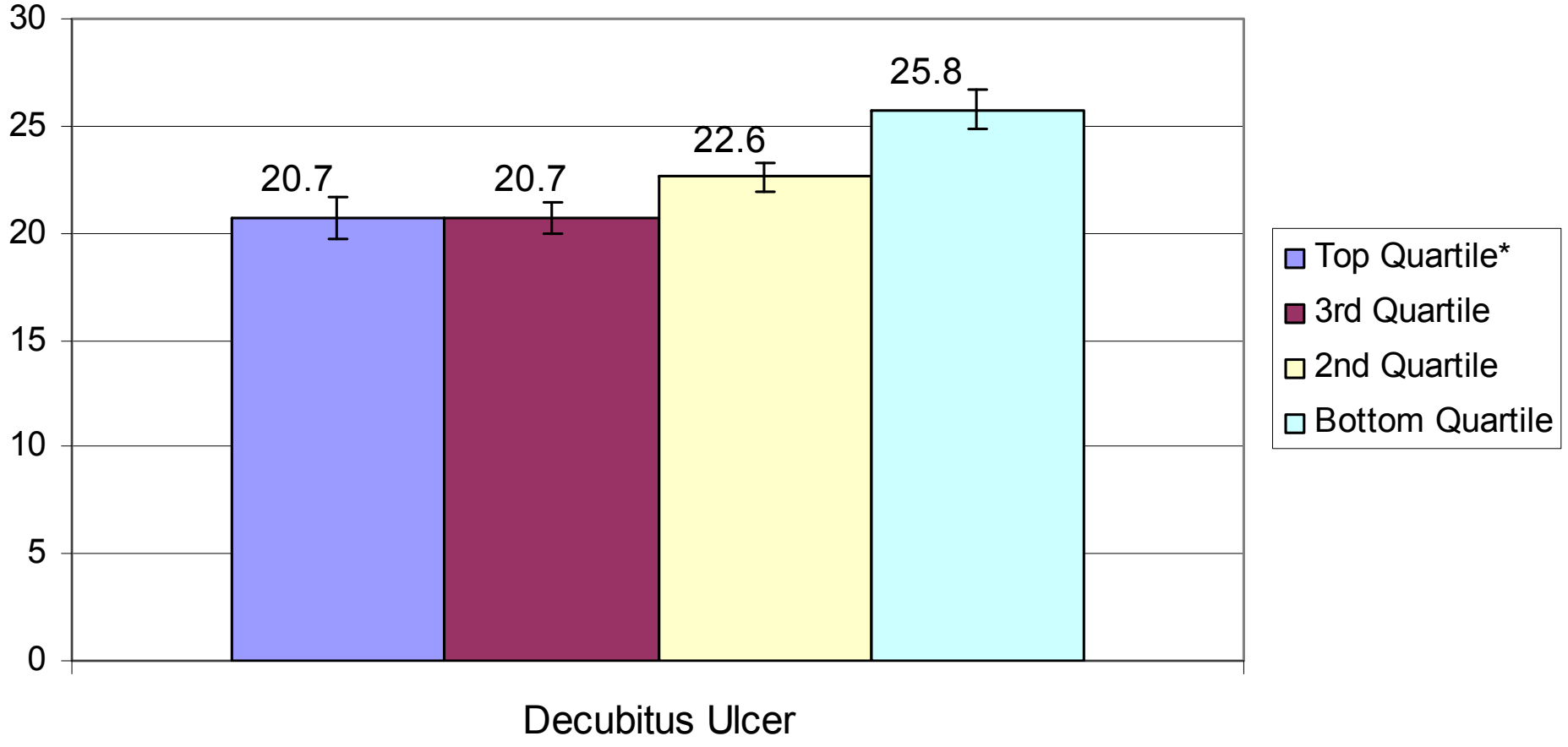
Figure 1. Relationship Between Patients' Willingness to Recommend Hospital and HQA Composite Performance



Relationship Between Cleanliness/Quietness of Hospital and Selected Infections Due to Medical Care Rate



Relationship Between Responsiveness of Medical Staff and Decubitus Ulcer Rate



Discussion

- We found several consistent relationships between patient experiences of care and measures of quality (HQA) and safety (PSIs)
  - Two overall measures (overall rating of hospital and willingness to recommend the hospital), had strongest relationships with performance in pneumonia, CHF, AMI, and surgical care
  - Better patient experiences in all domains were also associated with lower decubitus ulcer rates
  - Other complications such as infections due to medical care were strongly related to patient experiences in specific domains

Limitations

- Studied 800 hospitals in NCBD sample rather than all hospitals
- Limited number of quality metrics for comparison, each with unique limitations
- PSIs rely on billing data, validity as safety measures not well established
- Metrics examine different subsets of patients over slightly different time periods

Implications

- HCAHPS now publicly reported, offers consumers, payers, and policy-makers a new perspective on hospital quality
  - May be more meaningful to patients
  - Reflect care across virtually all conditions
- Relationship between patient experiences and technical quality of hospitals enhances the importance of these data
- Further research necessary to better understand these relationships

Questions